

Panthera

2017 Annual Report





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“EVERYTHING AROUND YOU JUST STOPS”

The hot wind smelled of wild grass and sage, alarm birds shrieked, and the cats made noise sparingly to avoid detection by hyenas. So recalls our partner photographer Patrick Meier of his encounter with a leopard and her cub in northern Botswana’s Okavango Delta. Tipped off by a guide, he spotted the cub first—50 meters up a jackalberry tree—and waited for the mother to return from a hunting trip.

When in earshot, the mother briefly beckoned for her cub with high chirps. After several attempts to descend from her treetop hideaway, the cub called back with a hoarse meow. Once reunited on the ground, the duo groomed, cuddled, and played, the cub stalking and ambushing “anything that moved in the wind.”

“Eventually,” Meier said, “she walked toward me, toward the camera, without any provocation. She looked right at me. It was one of those moments when time and everything around you just stops. You can’t think of anything else. I took a few photographs and just put the camera down.”



A female jaguar rests in a tree in the southern Brazilian Pantanal.

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A 22-month-old female lion in Zambia's Kafue National Park

Panthera's Mission

Panthera's mission is to ensure a future for wild cats and the vast landscapes on which they depend.

Our vision is a world where wild cats thrive in healthy, natural, and developed landscapes that sustain people and biodiversity.

Transforming Conservation

A MESSAGE FROM THE CHAIRMAN

When we founded Panthera over a decade ago, the overarching trigger was the realization that, if we were to solve the urgent crises facing big cats, a completely new approach was required: laser focused, fearless, out-of-the box in its thinking, and, especially, collaborative in spirit. In short, our goal was—and remains—to transform wildlife conservation as we know it to save big cats and their landscapes.

Nowhere has our brand of leadership been more apparent than in our groundbreaking marriage of science, technology, and law enforcement expertise to fight the scourge of wildlife poaching. As Conservation Council member General David Petraeus puts it so well, “Panthera is ‘walking point’ for the organizations that are fighting the war on wildlife, tackling poaching with uniquely impressive tactics, technology, and determination. It clearly is the organization to support in the fight against the poaching of big cats.”

We have gained that reputation because, as the only NGO solely dedicated to the survival of the world’s wild cats, we actually know what it takes to save cats. The wider world sees that too. When the National Fish and Wildlife Foundation transferred their Save the Tiger Fund over to Panthera, it was because, as they acknowledged, “Panthera knows how to save tigers.”

Fortunately, when given the opportunity to show our stuff, we have proven them right. Our renowned Tigers Forever Protocol, for example, has transformed Manas National Park in India from a war-torn land once stripped of its wildlife into a tiger haven. By increasing and intensively training patrols, and integrating intelligence efforts with programs that answer the needs of local people, Panthera and our partners have doubled the tiger population in Manas since we first started monitoring the population in 2011. These are the methods and results that will save this resplendent species, proven models that are proving fungible, and that we are now exporting to protect cheetahs, leopards, and lions in Africa. In 2017, Panthera indeed broke ground on new law enforcement and community-building initiatives in some of the most heavily poached but highest-potential landscapes in Southern, Central, and West Africa.

Nature needs more wins to keep up the momentum. For philanthropists are like investors; they go where capital is welcome, and they stay where it is well treated. And to show a return on investment means evincing the kinds of wins we are providing in Manas. Not surprisingly, perhaps, Panthera’s

results-oriented approach is not only reversing the debilitating “shrinking pie” phenomenon that pre-existed and catalyzed our organization’s inception, but is indeed creating a “bigger pie” for species conservation.

In 2017, in an initiative led by our latest board member, Nicole Mollo, we proudly welcomed Madame He Qiaonyu, Founder and Chairman of Beijing Oriental Landscape and Ecology Co. Ltd., to the Global Alliance for Wild Cats. Her Beijing Qiaonyu Foundation (BQF) has a breathtakingly bold vision to change the trajectory of threatened species in China and around the world. That BQF chose Panthera as its first international partner is a huge statement—and a great honor. To borrow from a *chengyu*, or Chinese idiom, ours was certainly a match made by Heaven and arranged by Earth. Together, our two organizations are already developing innovative programs to study and conserve snow leopards in China and will expand to engage the next generation of scientists in the recovery of African lions and other threatened big cats over the next decade.

On the other side of the globe, Panthera Board Member Ross Beaty and his family’s investment of CAD \$5 million over 10 years comprised the largest gift ever to Panthera’s Jaguar Corridor Initiative, the world’s most ambitious carnivore conservation program. Created by Dr. Alan Rabinowitz to secure the path of the jaguar from Mexico to Northern Argentina, the Corridor has broken the mold for landscape-wide conservation. Ross and Trisha Beaty’s vision and leadership in the jaguar range states will nurture conservation leaders in Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, and Colombia and help build the jaguar strongholds that will secure the future of this key umbrella species.

2017 was also marked by remarkable and exciting transformation within Panthera. After a global search for a new leader to grow Panthera’s reach and impact, we found the perfect candidate in our own midst. Panthera Board Member Dr. Frédéric Launay joined in November as President and CEO, and we could not be more fortunate. Fred’s roots in the field and passionate belief in the intrinsic value of species, combined with his strategic instincts and far-reaching relationships in the global community, make him the ideal standard-bearer for our ambitious vision.

Fred takes over a globally admired organization poised for rapid growth thanks to the work of his predecessor, and my brother-in-arms, Dr. Alan Rabinowitz. As our Chief Scientist, Alan is already

A sub-adult female tiger emerges from the bushes in India’s Bandhavgarh Tiger Reserve.

harnessing the knowledge and relationships developed across his legendary career to compel governments and investors to prioritize protecting wild cats. Panthera, and every person who has been captivated by the grace and mystery of the world’s big cats, owes a colossal debt to Alan, a man who is justifiably as iconic as the species he has spent his life saving.

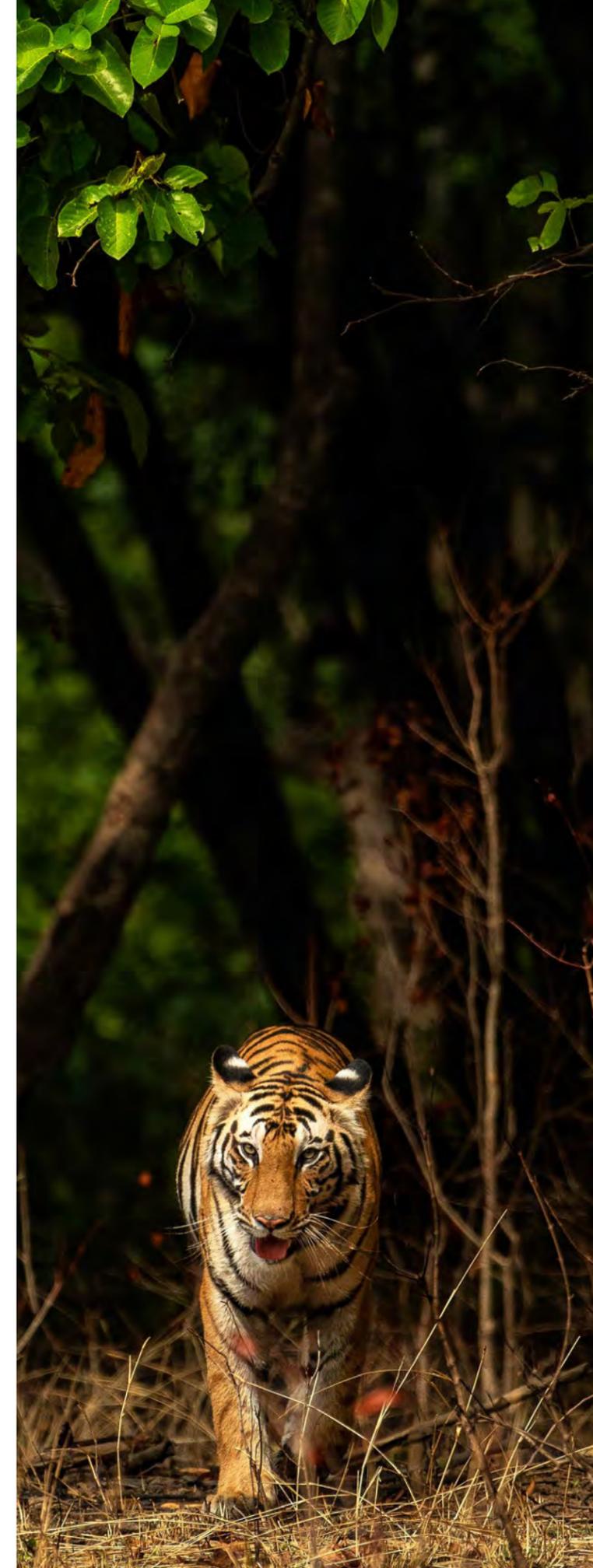
Taking their cues from Alan, and the management and staff that define the gold standard in our space, Panthera’s new and unique legion of influencers, the Conservation Council—co-chaired by the brilliantly charismatic activists Glenn Close and Jane Alexander—is elevating Panthera’s stature globally by raising awareness of wild cat conservation to new and diverse audiences. The Conservation Council members, more than 70 luminaries known for the ineffable contributions they’ve made to the worlds of business, law enforcement, government, fashion, media, entertainment, tourism, the military, and the arts, are invaluable guiding authorities and inspirations as Panthera continues to revolutionize species conservation.

I must admit that there have been moments when, witnessing the alacrity with which humankind seems bent on destroying the planet, it has been difficult for me to remain positive about the future of our magnificent cats. But I can say today with a full heart that my optimism that Panthera can accomplish its mission of changing the trajectory of cat conservation has never been greater. Our large and growing coalition of wild cat advocates is enabling us and our expanding cadre of allies to build on our successes and—steadily but surely—recover wild cats in the vast landscapes where they must surely prevail. In this quest, we’re proud to have the counsel and confidence of great environmentalists like the wonderful Glenn Close, and her co-Chair of the Conservation Council, Jane Alexander, who said, “If there is a future for great cats, it is in the hands of Panthera and its partners globally.”

As I thank all of those who have joined us in this noble mission—and given the future of cat conservation more hope than ever before—I most humbly agree.



THOMAS S. KAPLAN, Ph.D.
Founder, Chairman of the Board





Meet Dr. Fred Launay

PANTHERA'S NEW PRESIDENT AND CEO

There was a changing of the guard at Panthera in November: Noted species conservationist Dr. Frédéric Launay became President and Chief Executive Officer, succeeding Dr. Alan Rabinowitz, who held the CEO role since he co-founded Panthera in 2006. Dr. Rabinowitz remains a key member of Panthera's leadership in the newly created position of Chief Scientist.

Born in France, Dr. Launay began his career in the Kingdom of Saudi Arabia as a wildlife biologist, where he carried out reintroduction programs for the houbara bustard and Arabian oryx, among other species, and established the Kingdom's first protected area. Then, Dr. Launay relocated to the United Arab Emirates to serve at the National Avian Research Centre and participate in the creation of the Environment Agency – Abu Dhabi, the government agency overseeing environmental matters, where he held leadership positions. He subsequently held high-level posts in Abu Dhabi, including CEO of Al Ain Wildlife Park and Resort, a \$400 million redevelopment project.

Prior to joining Panthera, Dr. Launay was Director General of the Mohamed bin Zayed (MBZ) Species Conservation Fund, where he oversaw the funding of more than 1,200 conservation projects in 120 countries around the world. He has chaired the International Union for Conservation of Nature's Species Survival Commission (IUCN/SSC) Reintroduction Specialist Group for over 12 years and represents the SSC on the IUCN's World Heritage Site Committee. He is a board member of the Sahara Conservation Fund and a fellow of the Zoological Society of London, and continues to serve as a board member and advisor to the MBZ Species Conservation Fund.

Above: Dr. Launay feeds a rhino in Lewa Conservancy, Kenya, in 2008.

Dr. Launay with Panthera field staff in Colombia

Opposite: Dr. Launay (seated) pauses for a group photo at a Panthera retreat in the U.S.

A QUICK Q+A

HOW DOES YOUR DIVERSE BACKGROUND MAKE YOU WELL-POSITIONED TO TAKE PANTHERA'S HELM?

Most of the people working with species are hyper-specialists. I bring the ability to connect the dots and make use of all the tools we need to successfully conserve the species. Panthera already has the best species specialists in the world. We need more generalists to be the glue that holds Panthera together.

WHAT DO YOU HAVE IN MIND FOR PANTHERA?

Panthera has a very good base. There are very few organizations left that have the courage to do just species conservation. We need to go bigger with our programs and leverage our knowledge and influence. We need to demonstrate the importance of apex carnivores in all of the conservation arenas, move outside of our comfort zone and start interacting with land use planners, infrastructure people, finance people, social development organizations.

DID YOU EVER THINK YOU'D BE FOCUSED ON BIG CATS?

I always had an interest, but my path led me to something else. When this opportunity presented itself, I was really excited about it, and it was a no-brainer. It's like coming back to my roots of species conservation, being able to use all my professional experience in the context I most care about.

HOW DO YOU EXPLAIN TO THE PUBLIC WHY PANTHERA'S WORK IS SO IMPORTANT?

You conserve species because you love them, because you feel for them, because it hurts you when they are disappearing or are hunted and poached. But in the conservation world, we too often tell our species biologists to try to remove the emotion from what dictates our priorities and actions. We are, and will remain, a science-based organization, but not without heart.

HOW OFTEN DOES HUMANITY HUMBLE ITSELF TO ANYTHING ANYMORE?

Less and less. Let's go to the Brazilian Pantanal and look at jaguars in the wild. Take someone from New York or elsewhere and put him there in the presence of a jaguar 5 or 10 meters away. There is no way your life cannot be changed by this kind of experience. I think we need to keep that alive. Yes, we need the rational, but I think we shouldn't shy away to claim that big cats are of value intrinsically, and it doesn't take a Ph.D. to explain why. It is within us.



"I've long been drawn to Panthera's cause: as a supporter of its passionate field researchers through the Mohamed bin Zayed Species Conservation Fund; as a colleague of its leaders on global conservation bodies, and, most recently, as a board member. And while I'm glad to have this history with Panthera to draw upon in my new role, I am also excited to discover the new places we can go together."

"These first months at Panthera have only deepened my conviction that its science-first, species-focused, action-oriented approach is exactly what is needed to save wild cats—both big and small—before it is too late. It is an honor to represent Panthera as we seek to grow our conservation footprint and impact, and it will be my privilege to share our successes with you."

Champions for Big Cats

Luminaries Convene on Panthera's Conservation Council

In August 2017, Panthera announced the formation of its Conservation Council, convening more than 70 of the world's most respected figures from the spheres of business, law enforcement, government, fashion, media, entertainment, tourism, the military, and the arts.

This global advisory board provides Panthera with counsel on a wide variety of topics that help grow and develop our mission, from strategy and operational planning to communications and marketing. It represents a level of commitment unprecedented in the conservation community, both for its diverse scope and potential impact on the preservation of the world's wild cats and their critical ecosystems.

Appointees to the Conservation Council are approved by Panthera's Board of Directors. Their global reach into public policy, media, and entertainment extends Panthera's message to new audiences and opens up new avenues of support.

“Panthera is extremely humbled and fortunate to have access to the wide-ranging and deep expertise of this august body of individuals. Though diverse in their vocations, geographies, and worldviews, they are united by their shared optimism that together we can change the course of cat conservation. We are extraordinarily grateful for their selfless commitment to Panthera's mission and know that our efforts to protect wild cats around the world will benefit greatly from their guidance and collective passion.”

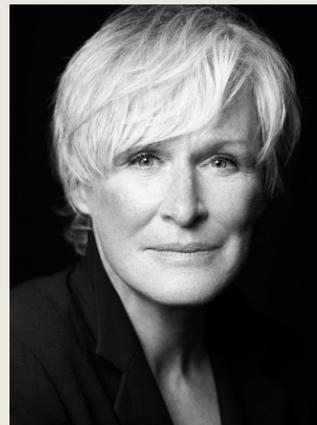


THOMAS S. KAPLAN, Ph.D.
Founder and Chairman, Panthera's Board of Directors



JANE ALEXANDER
*Actress
 Conservation Council Co-Chair*

“All wild cats today are threatened by human incursion, every single one of them, and some are on the brink of extinction. If there is a future for great cats, it is in the hands of Panthera and its partners globally.”



GLENN CLOSE
*Actress
 Conservation Council Co-Chair*

“I am so proud to be a part of this wonderful organization that is standing squarely between big cats and the perilous threats they face—a global protective force that is turning the tide for our most iconic and vulnerable species.”



GENERAL DAVID PETRAEUS
*U.S. Army (Ret.)
 Chairman, KKR Global Institute*

“Panthera is ‘walking point’ for the organizations that are fighting the war on wildlife...and tackling this challenge with uniquely impressive tactics, technology, and determination. It clearly is the organization to support in the fight against the poaching of big cats.”



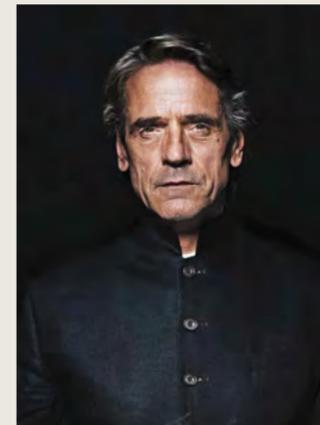
MAYA LIN
Artist, Architect

“With its incredible team of experts working so closely with local communities, Panthera is uniquely equipped to tap into the human fascination with wild cats and turn that passion into a global movement to save them.”



GEOFFREY KENT
*Founder, Chairman, and CEO
 Abercrombie & Kent*

“There's nothing like the wonder of seeing a big cat in the wild. What would an African safari be without the thrill of watching lions, leopards, and cheetahs? Fortunately, these fierce predators—so vulnerable to development—have fierce advocates in Panthera.”



JEREMY IRONS
Actor

“In a world where our magnificent wild cats are under assault, Panthera is giving them a voice. With Panthera as their tireless champion, there is hope that we will forever hear big cats roar.”



NICOLLE WALLACE
*Political Analyst, MSNBC,
 NBC News*

“Wild cats are the very essence of what it means to be free. Panthera is out there proving every day that it's not too late to save these majestic animals and the wild landscapes that sustain them.”



PIERRE-ALEXIS DUMAS
Artistic Director, Hermès

“Panthera's commitment to rigorous science, and their unique understanding of man's complex relationship with big cats, promise hope for these iconic animals.”

Program Highlights



Previous: A family of cheetahs in the Arusha Region of Tanzania

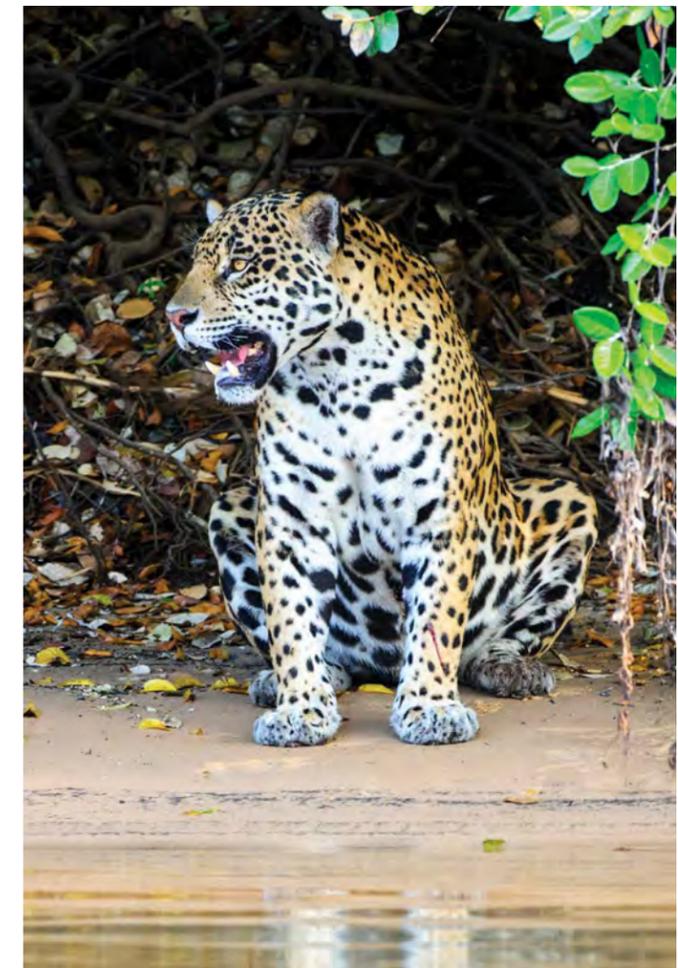
Opposite: A jaguar (front) and her cub pass a Panthera camera trap outside a cattle fence in Colombia.

Living Together

When human lives and wild cat lives overlap, conflict is bound to occur. Much of the time, it's directly related to big cats preying on livestock, which creates economic hardship for farmers and can threaten subsistence livelihoods. Every year globally, countless cats are killed by rural people in response to, or in anticipation of, these events.

Fostering understanding and cultivating coexistence—through education, economic development, and ecotourism initiatives—is a big part of Panthera's work around the globe. We are committed to partnering with rural communities to mitigate human-cat conflict with conservation efforts that support and respect the cultures and lives of those who share the landscape with wild cats.





Jaguars Prove Their Worth

Long the perceived scourge of cattle ranchers who make their livelihood in Brazil’s lush Pantanal, the jaguar enjoyed a significant public relations reboot there in 2017—through a landmark Panthera study and ecotourism based around the species.

Panthera Research Fellow Fernando Tortato and colleagues published the first-ever findings providing market values for a jaguar population—the one in and around Panthera’s Jofre Velho conservation ranch and Encontro das Águas State Park, where ecotourism operates near established livestock farms. Using a complex formula to map jaguar haunts visible to tourist boats and pinpoint profits at local lodges, the team calculated the hypothetical damages to neighboring ranches based on bovine market values and local reports of cattle kills by jaguars.

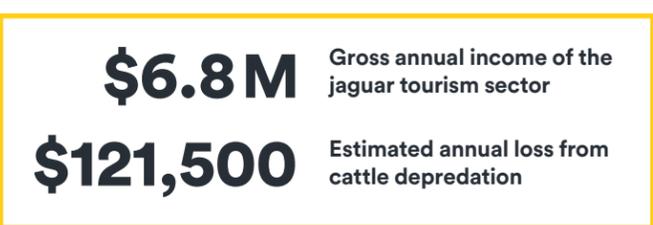
The results surprised even the scientists, who determined the jaguars are worth about 60 times more to tourism than the potential cost they inflict on ranchers. In addition, they surveyed tourists, finding them overwhelmingly receptive to donating to an incentive fund for ranchers who shun retaliatory jaguar killing in favor of living harmoniously with the wild cats.

While Panthera has been involved in ecotourism in the Pantanal for years—even collaborating with tour operators to develop

safety guidelines for wildlife viewing—the newfound research provides insights on how to potentially expand economic opportunities across the jaguar’s range.

Our Jofre Velho Ranch, which we have owned since 2014, is a good model. In 2017, we gave 80 paying overnight guests the life-changing chance to observe jaguars—and their associated flora and fauna—in the wild. And the tuition-free school we run here with the Ministry of Education of Mato Grosso enrolls at least 29 students, including adults learning to read and write and children who now have a short boat commute instead of moving to the city and being separated from their families for school. Panthera’s teacher here covers all the state-mandated subjects, but also includes lessons on the Pantanal, Pantaneiro culture, and Panthera’s jaguar conservation work.

Our Jofre Velho Ranch continues to demonstrate how ecotourism, anti-predation techniques, and community outreach and education can function to protect jaguars and grow local economies in Brazil and the rest of jaguar range.



NEXT STEPS

In 2018, Panthera hopes to create new protected areas in two priority jaguar habitats—San Lucas Forest in Colombia and Awaltara Territory in Nicaragua. In San Lucas, we seek to create a conservation mosaic covering more than 1,215,000 acres. In Awaltara, local indigenous partners are already discussing boundaries for the potential reserve, and our camera trap surveys will help identify valuable areas.

Above: Tourists spot a jaguar from their boats in the Pantanal.

Opposite: A female jaguar sits along the edge of the Cuiabá River.



Safe Travels for Young Lions

It's a rite of passage in every young male lion's life: the day his mother and aunts oust him from his home, and he has to survive away from the adults he's depended upon, find his own territory, and perhaps one day take over his own pride.

It's a dangerous time for the inexperienced male, usually in a coalition of brothers or cousins, when his natural roaming might leave him vulnerable to being killed by a passing vehicle or a farmer protecting livestock.

In 2012-13, this deadly conflict was deeply felt in Namibia's Kwando Wildlife Dispersal Area, a pivotal space of connectivity for lions between Angola, Botswana, and Zambia in the heart of the Kavango-Zambezi Transfrontier Conservation Area (KAZA). Poor cattle-grazing practices resulted in the deaths of 186 cows, leading to the retaliatory killing of 17 lions in 2013 alone. Young dispersing males were among the victims.

In 2013, Panthera teamed up with Lise Hanssen's Kwando Carnivore Project (KCP) to secure lion populations and safe passage between protected areas. Hanssen has worked with community members to build 100 lion-proof enclosures—known as kraals—in the Mudumu Complexes along the eastern bank of the Kwando River, and hired a human-wildlife conflict coordinator who helps conservancy game guards respond to incidents.

The result? An 85-percent reduction in the number of cattle killed by lions and a dramatic reduction in retaliatory lion killing. In 2015 and 2016, no lions were killed, and by 2017, the population had recovered to pre-2013 levels. Panthera also helped KCP step up lion surveys, maintaining a robust population database to better track the cats' movement. Finally, we fitted radio collars to six dispersal-aged males and monitored habitat with camera trap grids.

Today, lions moving through communal areas are significantly safer. But the dynamic is constantly changing: In early 2017, a new conflict hotspot emerged as males dispersed from nearby parks, and two lions were killed.

We are uncovering fascinating new lion dispersal corridors in the region all the time—and in cattle farming areas of northern Botswana without mitigation interventions, dispersing lions are at high risk. But some individuals we monitor fill us with hope: Sintika, for instance, has journeyed 150 kilometers through cattle country. In May 2018, he was spotted mating with a lioness in Botswana's Okavango Delta. This is the very definition of dispersal and helps empirically define effective gene flow.

100 

Corrals built on ranches near Nkasa Rupara and Mudumu National Parks

85% 

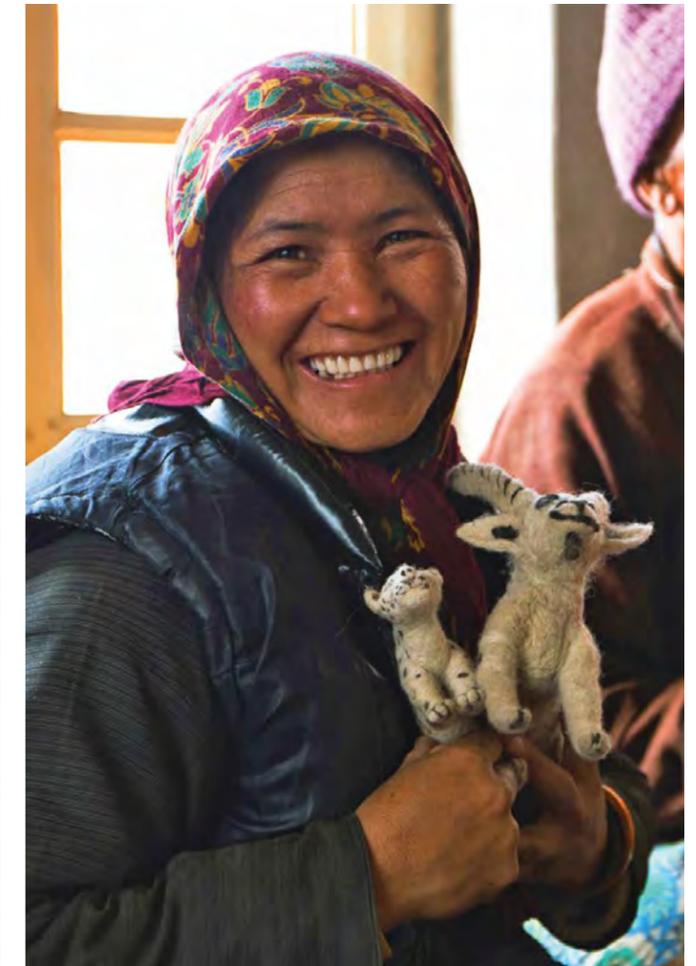
Reduction in number of lions killed by farmers in retaliation for livestock losses

NEXT STEPS

Buoyed by positive results, KCP, supported by Panthera, will extend its successful corral building throughout the Zambezi region to secure lions in all protected areas and pathways. Of critical interest is the Chobe River Floodplains, where some 30-40 lions from Chobe National Park have been killed. With support from National Geographic's Big Cat Initiative and Panthera, KCP has already built 20 lion-proof corrals to protect important dispersing and resident lions.

Above: Dr. Paul Funston, Senior Director of Panthera's Lion and Cheetah Programs, works with Mabale community members in Zimbabwe to create predator-proof corrals.

Opposite: Sintika, named by the local Lozi people for the watering hole his natal pride frequents in Namibia's Mudumu National Park, and his sister before Sintika left home.



Changing Attitudes at High Altitudes

In remote villages in Central Asia and India where rural farmers have long viewed snow leopards as threats to their livelihoods, a burgeoning interest in wildlife tourism is creating economic opportunities for local people—and casting the elusive cats in a more favorable light.

In the Pamir Mountains of eastern Tajikistan, Panthera has, over a decade, built deep relationships with local people and fostered their economic wellbeing, resulting in a shared long-term commitment to conserving their region’s vulnerable snow leopards. These conservation groups now protect over 3,000 square kilometers of habitat, with villagers employed in anti-poaching efforts, wildlife monitoring, sustainable hunting, and tourism activities.

Traditionally, these roles have been filled by men. Now, thanks to the Tajik Women and Conservation Initiative—a project Panthera launched in the summer of 2017 with Hunting and Conservation Alliance of Tajikistan (H&CAT)—women are joining the cause.

Foreign female tourists increasingly prefer female guides. To meet this need and empower local women, the initiative developed a three-year training course for them. So far, we’ve taught 18 women ranger and guide skills, such as map-reading, equipment maintenance, and mountain navigation. They are gaining occupational skills, financial independence, and respect.

In turn, the program fosters responsible co-existence with snow leopards—and incentivizes more local people to fight for their conservation.

Similar relationships are fostered in Ladakh, India, where Panthera lends support to the award-winning Himalayan Homestay program run by our affiliate organization Snow Leopard Conservancy-India Trust (SLC-IT). The program invites trekkers—often drawn in by the allure of snow leopards—to stay in people’s homes.

About 145 tourists a year come to learn about local culture with families and try their hands at traditional crafts like carpet weaving. Residents sell souvenirs like woolen figurines SLC-IT teaches them to make. Families use income generated to offset livestock lost to snow leopards—something that happens less often with Panthera’s predator-proofed pens.

The homestay program is changing attitudes toward the snow leopard. People who killed the cats in retaliation 15 years ago are now coming to their defense.

This work has not gone unnoticed: In 2017, SLC-IT won the Carl Zeiss Award for nature conservation, and Director Dr. Tsewang Namgail received an award from Adventure Nation and the Ecotourism Society of India.

145 

Tourists who participate in our partner’s innovative homestay program in Ladakh, India, each year

\$6K

Money generated by the Ladakh program for the villages

18 

Women trained in ranger and guide skills through a Panthera project in Tajikistan

NEXT STEPS

In the coming year, Panthera plans to complete the three-year Tajik Women and Conservation Initiative, graduating 10 women and expanding the program to other conservancies in Tajikistan and Kyrgyzstan. In India, we will roll out the Himalayan Homestay program in five more villages, diversify and increase access to handicraft training, and conduct workshops in seven monasteries, two colleges, and more than 10 schools.

Above: Tajik Women and Conservation Initiative trainees pause for a photo after days of hiking and wildlife watching in Bartang Valley of the Pamirs.

Opposite: A villager who learned to make wool felt figurines to sell to homestay tourists in Ladakh, India

Panthera staff train rangers from Senegal's Niokolo-Koba National Park in human tracking skills using symbolic markers.

Journey to Justice

Protecting and preserving wild cat populations requires a special blend of law and order—from the rangers patrolling and intercepting poachers on the ground to well-informed prosecutors, judges, and expert witnesses who make sure wildlife criminals are brought to justice. Add to that state-of-the-art surveillance and communications technology and savvy intelligence gathering and analysis—often taking place in some of the world's most remote locations.

In 2017, Panthera forged robust partnerships with NGOs and communities that increasingly understand the value of wild cats to their local economies. We also unveiled new mapping techniques to help pinpoint potential conflict hotspots and trained those charged with prosecuting offenders in new ways of thinking to stop criminal activity in its tracks.





Letting Tigers Bounce Back in India

Above: A camera trapping team and forest guards in Manas National Park

Opposite: A tiger cub investigates a camera trap in Manas.

When Panthera first began work in India's Manas National Park in 2011, the World Heritage Site was marred by civil unrest and the aftermath of an indigenous community's 1990s revolution. Separatists who dominated the stunning landscape—once teeming with wildlife—poached for subsistence. Tigers and their prey fell to remnant populations.

As tensions ebbed and flowed, conservationists tentatively resumed efforts in and around Manas. In 2011, the regional NGO Aaranyak reached out to Panthera, forming a vital partnership that is changing behaviors in this heavily pressured area.

The results have been nothing short of remarkable: From the second half of 2016 through 2017, we recorded a full 36-percent decline in human use of the park and a dramatic jump in tiger numbers. In fact, the Manas tiger population estimate has doubled since Panthera began Tigers Forever strategies there.

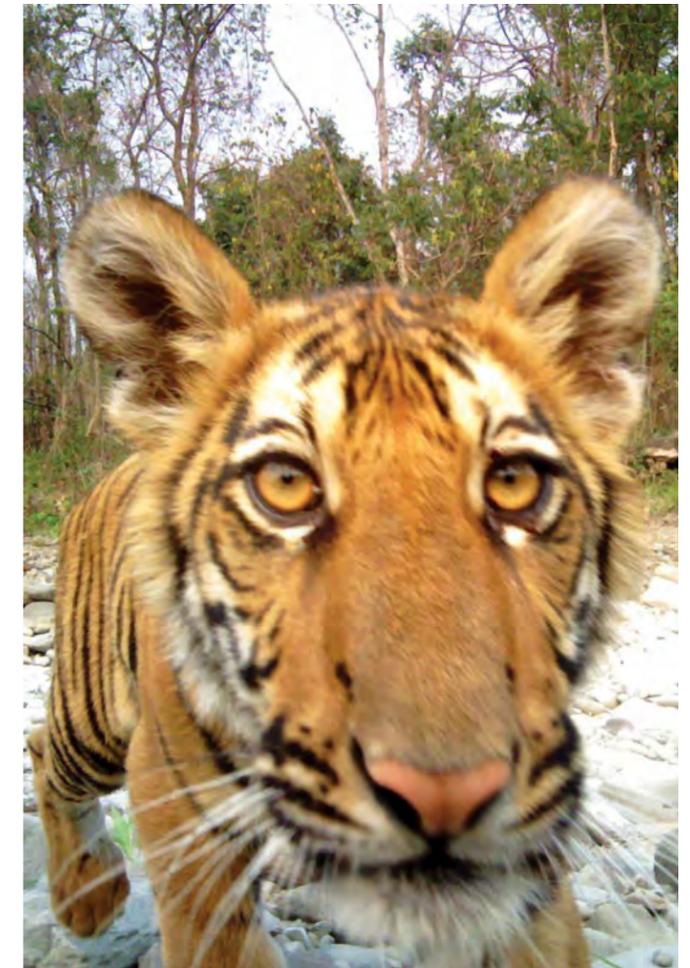
In 2017, the Manas Tigers—two patrol teams of NGO personnel and government forest guards—began responding to outside threats in real time. A Panthera/Aaranyak support team helps them use and retain their patrol skills and analyze information collected to better guide enforcement. In addition, Panthera launched its Conservation Security internship program, addressing local capacity issues more effectively and giving Panthera a permanent presence to help institutionalize state-of-

the-art systems and techniques. During six- to 12-month stays, young conservationists learn team roles and train local staff to be their replacements.

In its sixth year at the park, Panthera helped the Assam Forest Department integrate information—from site security, biological monitoring, and livelihood programs—for the first time, using data more effectively to define and track threats, make arrests, and reduce incursions into the park.

Better information sharing means more effective law enforcement and community support for conservation. For instance, someone caught illegally collecting firewood in Manas is issued a warning and referred to the livelihoods program, which may then give them a propane stove. Such programs lessen dependence on the park's resources while enhancing quality of life.

In 2017, we added 10 of our covert surveillance cameras, PoacherCams, to keep the growing tiger population safe. The team has conducted successful ambushes and apprehended several individuals. Dr. John Goodrich, Senior Director of Panthera's Tigers Program, credits Manas' Field Director HK Sharma and the Assam Forest Department for improved security and reduced poaching and use by fringe villagers.



2x 

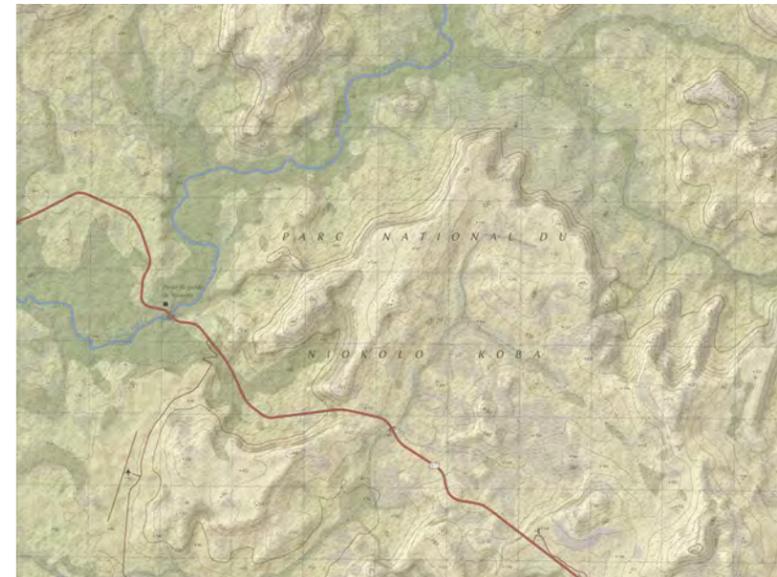
Tiger increase in Manas National Park since 2011

10 

PoacherCams added in Manas National Park

NEXT STEPS

In the coming years, Panthera will recruit new Conservation Security interns who hail from tiger range, bolstering local capacity and community bonds. Together with the Assam Forest Department and Aaranyak, we will work with bordering Royal Manas National Park in Bhutan to increase transboundary collaboration and reduce wildlife crime.



Setting the Stage for Lion Recovery

In 2014, a Panthera-led survey of West African lion populations revealed alarming declines in their numbers across the region and prompted the West African lion to be listed as critically endangered. Since then, we have assessed the potential for recovery of lions in the region's national parks, and, in 2016, began laying the groundwork for a comprehensive site management and security operation in Senegal's Niokolo-Koba National Park, a World Heritage Site.

Though very few of the cats are believed to exist in the park today, the potential for recovery of lions and all species there is huge.

In collaboration with the Direction des Parcs Nationaux (DPN), Dr. Phil Henschel, Director of Panthera's West and Central African Lion Program, established a Panthera project base in the southeastern corner of the park, where wildlife densities are the highest. With support from corporations like Toro Gold and Randgold Resources, and foundations like Lion Recovery Fund and Brigitte Bardot Foundation, among others, Panthera has been investing in improving park infrastructure and patrol routes in the intervention zone and training and equipping game scouts.

Now operating with solar electricity, GPS and SMART technology, advanced maps, field equipment, and a Toyota Land Cruiser for patrolling into more remote areas of the park, the Niokolo-Koba team is beginning the long road to recovery for this national treasure.

< 30 

Lions believed to be left in Niokolo-Koba National Park

200 

Lions the park could harbor if properly protected

200 

Watering holes uncovered by our mapping project

NEXT STEPS

Panthera's influence in Niokolo-Koba will be measured by scientifically guided wildlife population monitoring. With so few lions in the park, it should be possible for our scientists to get to know each as an individual and start monitoring population growth to ensure site security interventions are working. Securing the site and minimizing poaching now should reap benefits for the lions, elephants, wild dogs, and other wildlife that will replenish this silent savanna.

INNOVATION SPOTLIGHT A Road to Safety for Lions

In remote areas, conservationists often work with old and out-of-date navigational tools. In other areas, no maps exist at all. Senegal's Niokolo-Koba National Park, West Africa's second largest, was one such place—until Panthera and partners stepped in.

Given its size and ecology, the park could provide refuge for up to 200 lions. But today, due to sustained poaching, it harbors very few individuals. Rugged terrain makes it difficult to navigate, and patrol teams are at a serious disadvantage to local poachers who know the territory well.

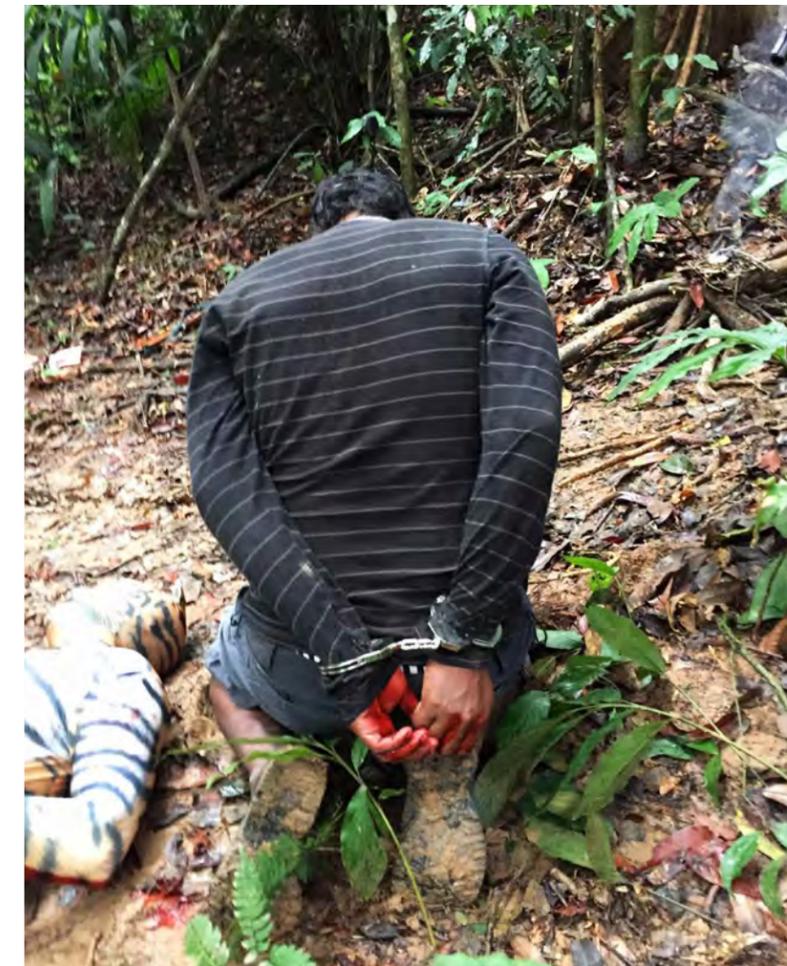
As a remedy, Panthera teamed up with the University of Montana's geography department to map the park, giving rangers the tools they need to track lions and pinpoint poachers in the vast landscape.

Using fine-scale satellite imagery donated by DigitalGlobe, team members—from 5,000 miles away—created high-quality topographic maps using ArcGIS and Adobe software. The maps are designed for tracking poachers: We digitized every hut, trail, road, and river. The final package—including waterproof maps and digital products made for Google Earth and a Garmin GPS system—was hand-delivered to grateful rangers in 2018.

These tools have already helped plan routing for a 35-kilometer all-weather access road to the new ranger guard post and revealed 200 previously unknown watering holes—key hotspots that attract poachers, and therefore essential for the anti-poaching teams to protect. The team is producing similar maps for patrollers in Kenya, Malaysia, where poaching threatens one of the few remaining tiger populations in Southeast Asia.

Above: A West African male lion

Opposite: Niokolo-Koba National Park rangers study maps provided by Panthera and partners to facilitate their anti-poaching patrols.



Putting Poachers on Trial

Forest rangers protecting vulnerable wildlife have one of the most difficult jobs in the world, spending days or weeks hiking long distances through some of the most treacherous terrains and climates, seeking out gangs of poachers who usually outnumber and outgun them.

Nothing undermines their efforts more than when poachers are caught red-handed—and then released due to failures of the judicial system.

While Panthera's Site Security Team successfully trains rangers across tiger range to detect and capture wildlife criminals, many prosecutors and judges don't have the knowledge or training necessary to successfully prosecute offenders or levy appropriate sentences.

This was one of Panthera's greatest challenges in Malaysia, where no one has ever been convicted of poaching with snares, the most common method of poaching tigers and prey in that country.

In 2017, we teamed with the U.S. Department of Justice and the U.S. Embassy in Malaysia to create a training program—Justice for Silent Victims—that educates the judiciary in the severity and prevalence of wildlife crime and the illicit money flowing from it.

With buy-in from the Chief Justice of Malaysia, Panthera hosted sessions in courtroom procedure, advocacy, and other new ways

of thinking for 107 expert witnesses, prosecutors, and judges, including a memorable and effective mock poaching with a costumed Dr. Rob Pickles—Monitoring Specialist at Panthera—standing in for a tiger.

Attending judiciary have pledged to increase fines and sentencing for wildlife crime offenders. Since the first workshop, 12 snare cases are being processed by the courts, many using the newfound skills of trained expert witnesses. Before this program, there had never been a single snare-related conviction in the history of Malaysia—but we hope to see one soon.

12		Snare cases being prosecuted since Justice for Silent Victims began in 2017
107		Expert witnesses, prosecutors, and judges trained in wildlife crime proceedings

NEXT STEPS

In 2018, we will train every prosecuting officer from the Department of Wildlife and National Parks Peninsular Malaysia in trial advocacy skills, and begin training arresting and investigating officers. Panthera has plans to extend the successful program's workshops throughout Southeast Asia.

Above: Panthera Monitoring Specialist Rob Pickles; Wai Yee Lam, the COO of Panthera partner Rimba; and others pantomime a mock poaching and arrest for an audience.

Panthera biologist Xia Stevens
radio-tracks a lioness in Zambia's
Kafue National Park.

Staying Connected

The success of a wild cat population is a direct result of its ability to roam safely in search of mates, prey, water, and refuge. While designating and securing large Protected Areas is paramount, securing the corridors between such spaces can play a major role in recovering populations of wild cats and other large carnivores and preserving their genetic integrity.

Panthera works to create lasting partnerships—be they with local tribes, forestry and conservation experts, or international NGOs—to secure and preserve these key areas. Place by place, our coalitions work across borders to bring people together with the shared goal of preserving precious landscapes.





Forging Paths for KAZA's Cats

Above: Dr. Kim Young-Overton, Director of Panthera's Cheetah Program, watches a 21-month-old female cheetah after 18 hours of monitoring. A team eventually collared and tracked the cat.

Opposite: Wildlife police officers learn to use the SMART software application in Kafue.

Securing community buy-in is often a crucial piece of the connectivity puzzle. In 2017, Panthera brought four African chiefdoms together in a shared goal to build a thriving wildlife economy while protecting a critical wildlife corridor from Botswana's Chobe National Park to Zambia's Kafue National Park, in the Kavango–Zambezi Transfrontier Conservation Area (KAZA).

This new framework for a trans-tribal community conservancy—named Inyasemu, after the initials of four chiefs—will maintain critical connectivity for large carnivores like cheetahs and lions between these two vast wildlife landscapes. In all, the corridor will provide safe passage along no less than 60 kilometers and protect the rapidly disappearing wilderness between these two parks.

The project—a partnership with the Zambian Department of National Parks & Wildlife, traditional authorities and communities, and others—will provide communities with the resources and skills to manage their own wildlife, building an economy based on sustainable natural resource use and tourism management.

Its effects on the Zambian cheetah population could be game-changing. There are estimated to be only 7,100 cheetahs left in the wild, and their future remains uncertain across their range

without the possibility of a safe corridor between the two parks. Extinct in 25 countries and possibly extinct in another 13 countries, the planet's fastest land animal has vanished from approximately 91 percent of its historic range.

The Inyasemu Community Conservancy will allow lions, cheetahs, leopards, and other wildlife to move freely across the last remaining 30 kilometers of unprotected habitat that connects these ecosystems.

60 Kilometers of critical wildlife corridor to be protected by Panthera's trans-tribal community conservancy

NEXT STEPS

While efforts to keep Kafue in KAZA produced a framework for a trans-tribal community conservancy in 2017, providing education and support to communities and tribal leaders will go on for at least another three years. Panthera may maintain an indefinite association with the burgeoning conservancy to ensure its stability and permanence.



INNOVATION SPOTLIGHT

Thinking SMART

Zimbabwe's Hwange National Park houses some of the larger African lion and elephant populations on Earth. The vast park's ecosystem supports about 500 lions—including Cecil's former pride—as well as leopards, cheetahs, and wild dogs. Protecting them from poachers and community members is no easy feat, given the scarcity of frontline wildlife managers and resources in the region.

Over the past few years, Panthera has given wildlife patrols here and across Zimbabwe and Zambia tools and training to deploy officers and resources to greatest effect through SMART. This technology enables officials to capture and analyze key data and make informed decisions to give big cats the best chance of survival.

Zimbabwe has adopted SMART as its top tool for wildlife law enforcement data capture across the country. In 2017, Panthera, which has a seat on the national steering committee for this effort, trained 50 rangers in effective data collection. We also trained 108 wildlife law enforcement officers in effective data collection in Zambia, where four national parks are using SMART as their main monitoring software. In 1,088 patrols covering 114,018 kilometers, SMART recorded 246 arrests, 153 guns confiscated, and 852 snares removed.

In addition to guiding law enforcement, SMART provides ecologists with information on poaching and animal distribution through parks they manage, helping them spot trends in wildlife crime. In Hwange, Panthera has committed to train the Longshields Lion Guardians to record livestock predation, poaching, and large carnivore presence during daily patrols.



JOURNEY of the JAGUAR

An Epic Journey Gets Underway

Sixteen years after he initiated a bold new approach to jaguar conservation, Dr. Alan Rabinowitz returned to jaguar range, where Panthera's ambitious Jaguar Corridor Initiative is tackling the most pressing threats to Latin America's iconic big cat.

On the Journey of the Jaguar, Dr. Rabinowitz and Dr. Howard Quigley, Jaguar Program Executive Director, will venture into jaguar strongholds from northern Mexico to northern Argentina, joining Panthera's researchers and partners in the field and meeting with community members, business and government leaders, and supporters. Over the next three years, they will shine a light on the progress being made to secure the Jaguar Corridor—and the challenges in places where jaguars are most at risk.

Their mission: to galvanize the biological, economic, political, and cultural case for saving the jaguar while its numbers are still relatively robust—a unique opportunity and urgent call to avert the extinction threat now facing most of the world's great cats.

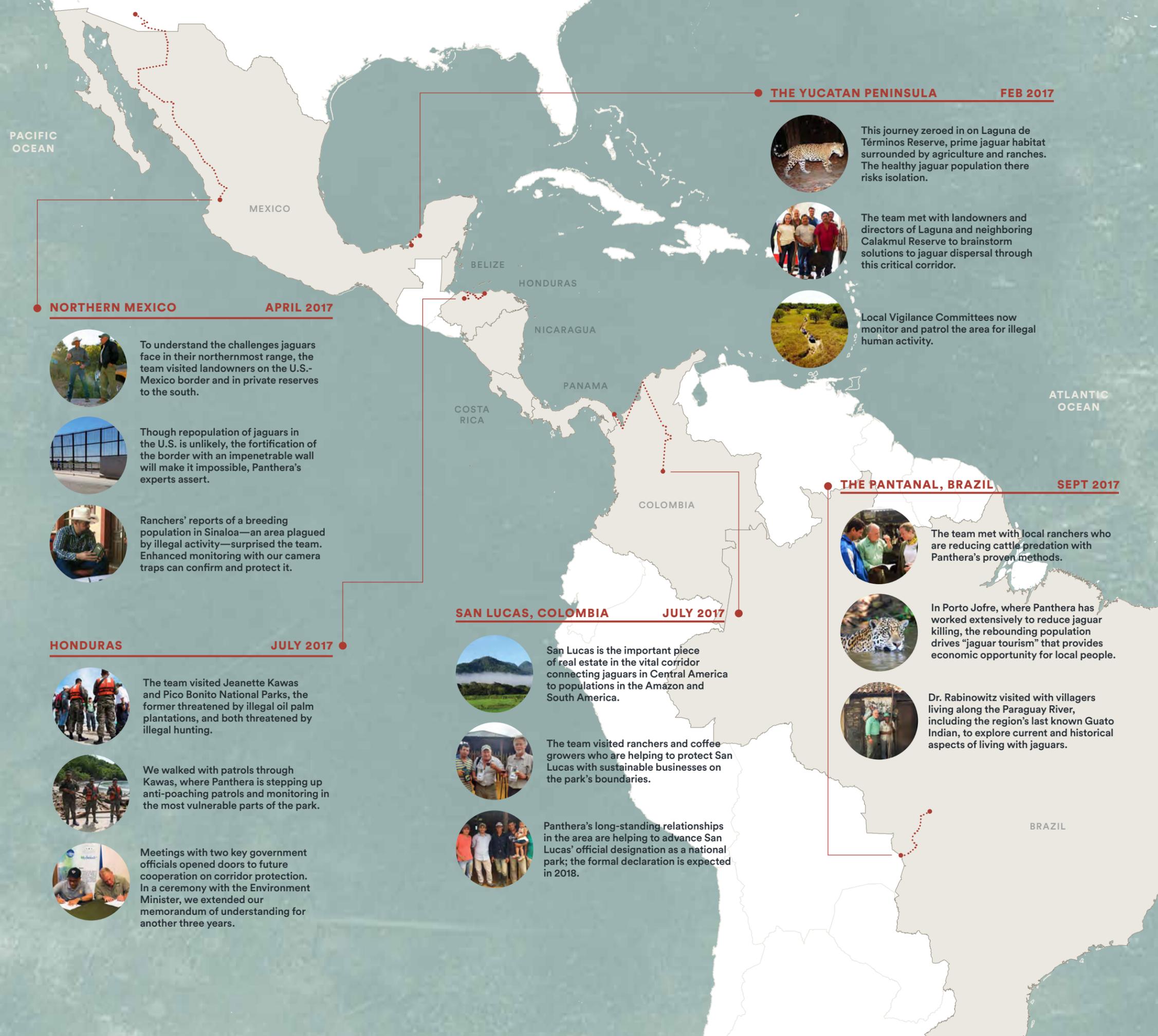
Follow the journey at journeyofthejaguar.org.



ALAN RABINOWITZ, Ph.D.
Chief Scientist



HOWARD QUIGLEY, Ph.D.
Executive Director,
Jaguar Program



NORTHERN MEXICO APRIL 2017



To understand the challenges jaguars face in their northernmost range, the team visited landowners on the U.S.-Mexico border and in private reserves to the south.



Though repopulation of jaguars in the U.S. is unlikely, the fortification of the border with an impenetrable wall will make it impossible, Panthera's experts assert.



Ranchers' reports of a breeding population in Sinaloa—an area plagued by illegal activity—surprised the team. Enhanced monitoring with our camera traps can confirm and protect it.

HONDURAS JULY 2017



The team visited Jeanette Kawas and Pico Bonito National Parks, the former threatened by illegal oil palm plantations, and both threatened by illegal hunting.



We walked with patrols through Kawas, where Panthera is stepping up anti-poaching patrols and monitoring in the most vulnerable parts of the park.



Meetings with two key government officials opened doors to future cooperation on corridor protection. In a ceremony with the Environment Minister, we extended our memorandum of understanding for another three years.

THE YUCATAN PENINSULA FEB 2017



This journey zeroed in on Laguna de Términos Reserve, prime jaguar habitat surrounded by agriculture and ranches. The healthy jaguar population there risks isolation.



The team met with landowners and directors of Laguna and neighboring Calakmul Reserve to brainstorm solutions to jaguar dispersal through this critical corridor.



Local Vigilance Committees now monitor and patrol the area for illegal human activity.

SAN LUCAS, COLOMBIA JULY 2017



San Lucas is the important piece of real estate in the vital corridor connecting jaguars in Central America to populations in the Amazon and South America.



The team visited ranchers and coffee growers who are helping to protect San Lucas with sustainable businesses on the park's boundaries.



Panthera's long-standing relationships in the area are helping to advance San Lucas' official designation as a national park; the formal declaration is expected in 2018.

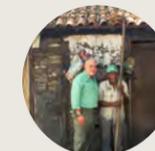
THE PANTANAL, BRAZIL SEPT 2017



The team met with local ranchers who are reducing cattle predation with Panthera's proven methods.



In Porto Jofre, where Panthera has worked extensively to reduce jaguar killing, the rebounding population drives "jaguar tourism" that provides economic opportunity for local people.



Dr. Rabinowitz visited with villagers living along the Paraguay River, including the region's last known Guato Indian, to explore current and historical aspects of living with jaguars.

Panthera's Snow Leopard Program Principal Investigator Shannon Kachel and veterinarians John Ochsenreiter and Ric Berlinski collar a male snow leopard at night in Sarychat-Ertash Strict Nature Reserve, in the Tien Shan Mountains of eastern Kyrgyzstan.



Making Discoveries

Panthera's scientists have always been prolific writers, and 2017 continued that tradition. One of the ways we set ourselves apart in the conservation community is through our emphasis on research and learning, whether it's performed by the field staff we employ or the students, fellows, and interns we support with resources and training. We also believe data should be published and shared so it can be accessed and used by the widest possible audiences to advance the work of conservationists everywhere.

The work our people published this year (for highlights, see page 50) made waves—both big and small—in the conservation world, in the media, and in the public. And, as always, our science is informing and propelling our conservation action globally.



What Makes Wild Cats Tick



LUKE HUNTER, Ph.D.
Chief Conservation Officer

At the very heart of Panthera's conservation work is science: the foundation upon which all of our actions to protect wild cats is built. The hard data we collect about cats and the reasons for their decline allow us to develop lifesaving strategies that are targeted, efficient, and effective.

But, as I reviewed the prodigious body of research our talented team produced in 2017—nearly 70 scientific publications—a revealing theme emerged: It's not enough for Panthera's scientists to just count cats and tackle their threats; we also want to understand them. And we are uniquely positioned to do so. Who better to define a path to saving wild cats—and be equipped to advocate for them—than those who day-after-day walk in their tracks, hear what they hear, see what they see?

In 2017, several of our researchers produced novel work that speaks to that desire—the pure passion for big cats that drives us to discover what makes them tick.

In a series of thought-provoking papers, our Puma Program's Lead Scientist Dr. Mark Elbroch and his team capped more than 17 years of work in Wyoming's Teton Mountains with remarkable revelations about pumas. The findings of one groundbreaking study, published in the prestigious journal *Science Advances*, offered the first evidence of complex social strategies among pumas, long believed to be among the most solitary of wild cats.

Using movement data from GPS-collared pumas and a vast catalog of camera trap images, the Teton Cougar Project team documented the social interactions of pumas at 1,000 prey



carcasses. Then, they used cutting-edge analyses of puma networks to reveal that the species exhibits strategies like more social animals, including meal sharing among unrelated adults and reciprocity among those adults down the line. The research is the first to quantify complex, enduring, and “friendly” interactions of these secretive animals, revealing a rich puma society far more tolerant and social than previously thought.

Another Panthera team monitoring leopards in the Sabi Sand Game Reserve in South Africa wondered about the length of time a female leopard spends caring for her cubs. Do the mothers spend more time with existing cubs or gamble on the potential of future litters?

Using a 40-year data set and more than 5,000 observations of females in the wild, Leopard Program Director Dr. Guy Balme and his team found that female leopards are deeply committed to their cubs. The research showed that mothers prolonged care during periods of prey scarcity and appeared sensitive to their offsprings' demands, adjusting levels of care accordingly. It also overturned an old “bush myth” that leopards abandon lone cubs because it pays to start over in the hope that a larger litter survives. Leopards invest heavily in their current litter, regardless of its size—in other words, leopard moms love the one they're with.

A similar deep dive into big data in Belize helped paint a crystal clear picture of the state of the protected jaguar population in Cockscomb Basin Wildlife Sanctuary. Using camera trap data from 14 years of continuous monitoring, researchers, led by our



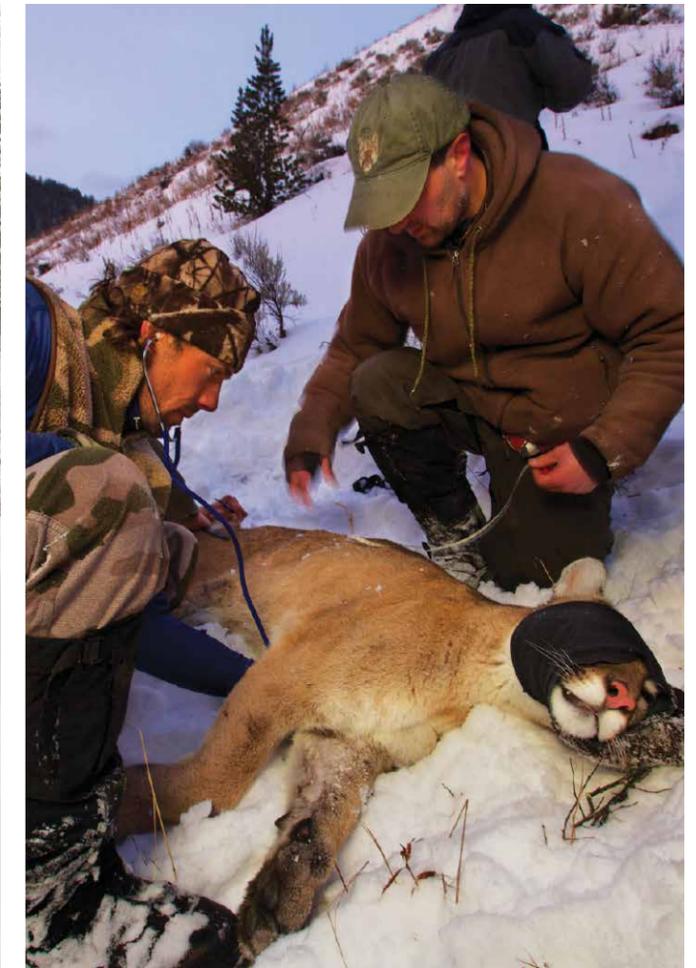
fellow Dr. Bart Harmsen, documented the dynamics of 105 individual adult jaguars through more than 3,000 detection events.

Panthera's experts were able to estimate apparent survival and temporary emigration patterns by combing through the mountain of data, providing very fine-grained insights into the population's fluctuations and health. Such resolution allows us to establish what “normal” means for this population and draws a baseline for researchers to work from into the future.

I've often pondered whether this deep understanding of wild cat ecology and behavior is really necessary to our applied conservation mission. After a decade or more in the field studying pumas or leopards or jaguars, don't we know already what we need to do to save them?

In many cases, the answer is yes. Understanding how leopard moms make decisions about family planning is unlikely to change our strategy for conserving them. But you can never be certain; the deeper our understanding, the less likely we are to miss an important factor in designing that strategy.

Even more fundamental, it fulfills a desire in us to deeply know the animals we conserve. That curiosity makes us more complete as scientists and more effective as a conservation organization. We do not assume the answer is obvious or complete, and our admiration for these magnificent creatures is central to our mission. Science is indeed at the heart of Panthera's work. And, just as important, there is heart in our science.



Busting Myths and Protecting Pumas

Above: A puma dubbed F47 by researchers walks by our camera trap in Wyoming's Gros Ventre Range. Her collar was the last removed from a puma by Panthera's Teton Cougar Project.

Opposite: Members of Panthera's Teton Cougar Project collar a sedated cougar with a tracking device in order to monitor its movements.

In June 2017, our scientists removed the last collar from a research puma in Panthera's Teton Cougar Project—a bittersweet culmination of 17 years of highly successful and illuminating fieldwork in the Jackson Hole landscape of northwest Wyoming.

Following more than 150 study animals over the region's rugged terrain yielded thought-provoking insights that challenged long-held misconceptions that continue to undermine the species' conservation.

"Our research is unraveling myths, letting us better understand the fascinating and critical role pumas play in the landscapes they occupy and, most importantly, helping us better protect them," said Puma Program Lead Scientist Dr. Mark Elbroch. "It's so important to educate people about this beautiful big cat in order to reduce the fear and anxiety that can lead to its persecution."

Over time, Panthera's research and advocacy led to a stunning 75-percent reduction in the puma-hunting quota in the region, as well as significant reductions in three adjacent hunting units. In addition, Panthera collaborated in recent years with Wyoming houndsmen associations to stop legislation to introduce puma trapping in the region and to reduce out-of-state hunter allotments in the Black Hills region, which had led to very high puma killing.

As the project drew to a close, Panthera's puma researchers began poring over their data. In 2017, the team published a dozen peer-reviewed papers on puma ecology and conservation, provided six presentations at academic conferences, and shared findings with more than 60 news outlets around the globe. Their extraordinary body of work is among the most comprehensive ever compiled on the species and comprises much of the recent science elucidating these elusive creatures.

Over its successful run, the PTCP chronicled the first-ever footage of a female with kittens in her den and evidence of two puma "adoptions," quantified the negative impacts of puma hunting and wolf recolonization on the local puma population, and performed groundbreaking research on the secret social network that exists among these solitary carnivores.

"This opens the door to enormous possibilities," Dr. Elbroch said of the latter work, which documented cases of food-sharing among unrelated cats. "Are pumas everywhere behaving the same, or only in areas with large prey? Are other species like leopards and wolverines and so many others acting the same way? There is so much more to discover about the rich, secret social lives of wild creatures."

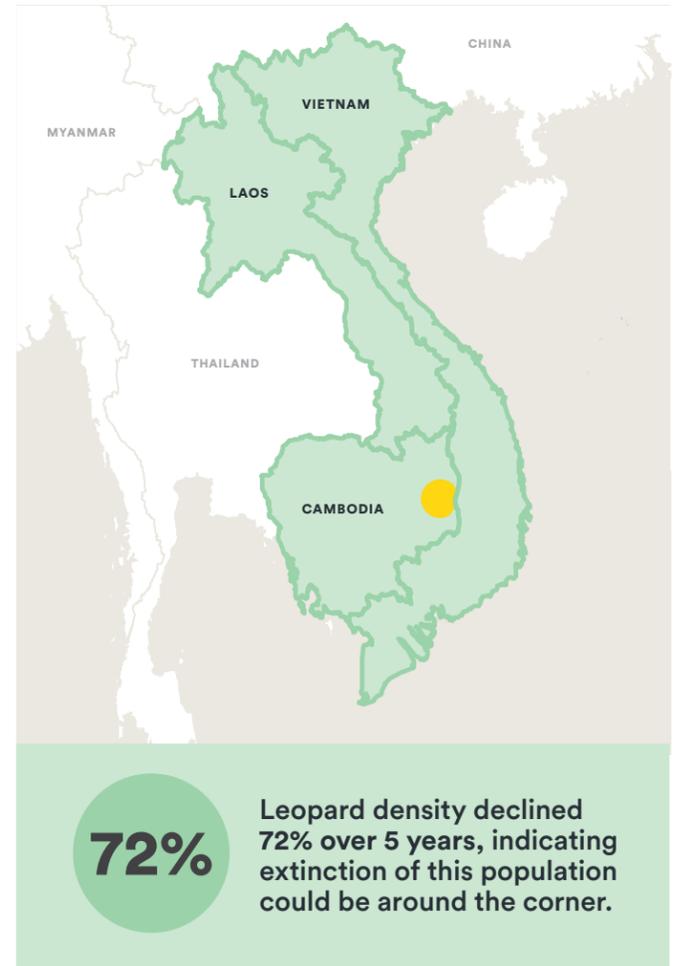
75%  The drop in Wyoming's puma-hunting quota after years of research and advocacy by Panthera

12 Peer-reviewed papers published by the Puma Program in 2017

150+ Pumas monitored by the Panthera Teton Cougar Project

NEXT STEPS

The Puma Program has spent three years developing its next core geographic focus: the greater Torres del Paine National Park landscape in Chile's Patagonia region, where it's estimated more pumas are illegally killed than in any spot in its range. We're working with the park, outfitters, and guides to develop puma-focused ecotourism, and helping expand ranchers' use of guard dogs to prevent puma attacks on livestock.



Predators on the Brink

Leopards are a monument to opportunism, adapting to diverse habitats from the jungle to the desert. But a 2017 study of the world’s last breeding population in Cambodia confirmed the somber news that leopards there have declined an astonishing 72 percent—and are at immediate risk of local extinction.

Carried out in Cambodia’s Eastern Plains Landscape, the study revealed one of the lowest concentrations of leopards ever reported in Asia, with a density of just one individual per 100 square kilometers. Increased poaching, especially indiscriminate snaring for the illegal wildlife trade and bushmeat, is to blame for the dramatic decline.

Prompted by the study’s findings, Panthera and Oxford University’s Wildlife Conservation Research Unit (WildCRU) are working with local and national collaborators to increase effective law enforcement and monitoring of this region. The team also strives to strengthen environmental laws to develop strictly protected conservation zones and increased fines for poachers.

Historically found throughout most of Southeast Asia, the Indochinese leopard has lost 95 percent of its range and is likely to be classified as Critically Endangered by the International Union for Conservation of Nature in 2018. A separate study

authored by WildCRU, Panthera, and partners estimates just over 1,000 breeding adult Indochinese leopards remain across the region. However, just 20-30 reproductive individuals remain in eastern Cambodia.

“This population represents the last glimmer of hope for leopards in all of Laos, Cambodia, and Vietnam—a subspecies on the verge of blinking out,” said Panthera Southeast Asia Leopard Program Coordinator Dr. Jan Kamler, the study’s co-author. “No longer can we, as an international community, overlook conservation of this unique wild cat.”

NEXT STEPS

Panthera has increased the monitoring of this important leopard population by conducting more camera trap surveys and increasing the areas where leopards are surveyed.



Above: An Indochinese leopard passes a camera trap in the study site in Cambodia.

Opposite: A poacher passes by the same camera trap as the leopard.

Investing in the Future

In addition to Panthera's field programs, where we invest the great bulk of our human and financial capital, Panthera operates four awards programs open to highly qualified candidates from around the world. In 2017, we granted \$206,000 to the following recipients.

WINSTON COBB MEMORIAL FELLOWSHIP

Supports field-based internships for early career conservationists on projects led by Panthera or partners

Connor Meyer
Snow Leopard Program, Kyrgyzstan

Sage Solomine
Grant and Integrated Conservation Programs, New York

Sophie May Watts
Snow Leopard Program, India

KAPLAN GRADUATE AWARDS

Supports biology graduate students working on all wild felids, with a particular focus on threatened species

Drew Bantlin
University of Wisconsin-Madison, "Lion reintroduction offers to test theory about top carnivores and to establish a new population in Rwanda"

Laura Gigliotti
Clemson University, "Spatially explicit physiology and demography of cheetahs: Implications for conservations and restoration"

Malle Gueye
Antwerp University, "Human-wildlife conflicts in Niokolo-Koba National Park"

Travis King
Washington State University, "Landscape genetics as a basis for multi-carnivore connectivity and corridor modeling in Honduras"

Michelle Peziol
Washington State University, "Quantifying the puma's keystone roles in the southern Yellowstone ecosystem: conservation implications for pumas in the 21st century"

Paolo Strampelli
University of Oxford, "Informing large carnivore conservation and management strategies in Ruaha-Rungwa through large-scale assessments of status, distribution, and threats"

SMALL CAT ACTION FUND (SCAF)

Supports conservation and research on many of the 31 small cat species

Sagar Dahal
Small Mammals Conservation and Research Foundation, "Conservation initiative of fishing cat in human dominated landscape of Bara District, Nepal"

Dr. Andrew Hearn
WildCRU, University of Oxford, "Assessing the corridors, barriers to movement, threats and conservation needs of the flat-headed cats in a human dominated landscape"

Flavia Pereira Tirelli
Pontifícia Universidade Católica do Rio Grande do Sul, "Effects of human land-use on southern tigrine (Leopardus guttulus) populations"

SABIN SNOW LEOPARD GRANT

Supports conservation efforts on the snow leopard in Asia

Imogene Cancellare and Dr. Kyle McCarthy
University of Delaware, "Range-wide phylogeography and conservation genetics of snow leopards in high Asia"

Sydney Greenfield
Beijing Forestry University, "A survey of local factors driving depredation and creating risk models and maps and recommendations for two reserves in China"

Dr. Natalie Schmitt
McMaster University, "A rapid in situ approach for identifying snow leopard DNA"



LAURA GIGLIOTTI

Ms. Gigliotti used her Kaplan award to investigate how cheetahs use their habitat—in this case, fenced game reserves in South Africa—in relation to lion and leopard density, and prey density, and analyzed how habitat use patterns affect individual cheetah survival and reproduction. Previous research suggested that the majority of cheetah mortality, especially for juveniles, is a result of lion and leopard predation.



CONNOR MEYER

Mr. Meyer assisted Panthera staff, a veterinarian, and reserve rangers studying snow leopard and wolf kill sites through GPS clusters from radio-collared animals in Kyrgyzstan. He also set and monitored camera traps and snares, radio-collared study animals, and collected scat samples for genetic analysis. Mr. Meyer described the difficult task of even spotting a snow leopard in the wild in an evocative post on Panthera's blog: "She was slowly moving away from her kill and into the open. Once she noticed us, she stopped and disappeared. I had heard about large cats vanishing without moving but had attributed it to researchers exaggerating about the elusiveness of their study species. Now I believe it."



DR. ANDREW HEARN

The endangered flat-headed cat (*Prionailurus planiceps*) has received very little scientific and conservation attention anywhere in its range, which includes Sumatra, Borneo, and the Malayan Peninsula. Dr. Hearn is using his SCAF grant to conduct the first detailed ecological study of a population of flat-headed cats in Brunei, Borneo, to identify, prioritize, and protect key habitat and corridors in the region.



DR. NATALIE SCHMITT

Dr. Schmitt seeks a way to rapidly identify endangered species by their biological samples in the field, work that would enable border and customs agencies worldwide to quickly recognize illegally trafficked animals. Dr. Schmitt is adapting, testing, and refining a field-test kit with snow leopards as the model. Support from Panthera and the Sabin grant opened up opportunities for her: "I was now an independent scientist with no ties to government or universities—a complete anomaly in the scientific world," she wrote. "I now have the flexibility to take a more multi-disciplinary and holistic approach to a conservation project."



A young tiger cub in Ranthambore National Park, India

2017 Financial Summary

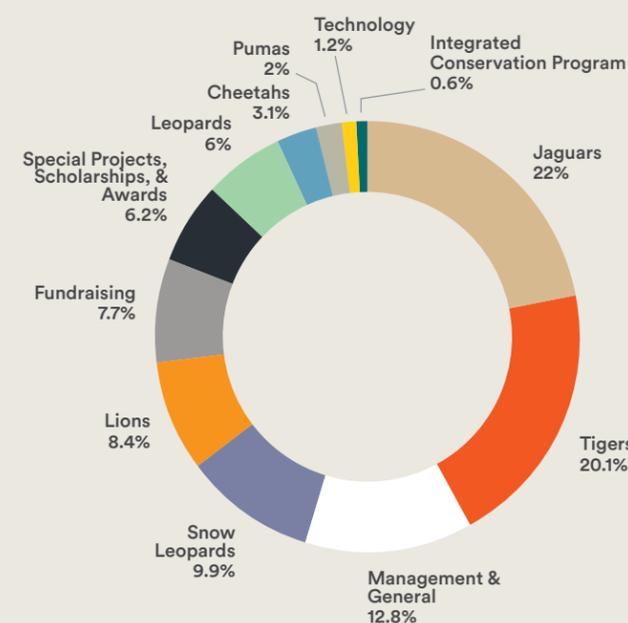
Panthera, through its worldwide conservation efforts, continued its pledge to maximize the impact of our donors' generous investments. Revenue increased by 3 percent from FY2016 to FY2017, with a corresponding 5 percent increase in program expenses spread across six of the primary seven species programs. Infrastructure enhancements implemented in 2015 enabled the trend of an increased proportion of program spending to total spending, improving to 80 percent, from 78 percent in FY2016 and 73 percent in FY2015.

Copies of Panthera's complete audited financial statements can be found on our website at panthera.org.

Total Expenses

2017 Total Expenses	\$13,403,588
2016 Total Expenses	\$13,324,552

2017 Expenses



Revenue

	2017	2016
Unrestricted Contributions & Grants	\$2,455,523	\$2,309,328
Net Assets Released from Restriction	\$11,255,813	\$11,212,180
Total Revenue	\$13,711,336	\$13,521,508
2017 Net Assets End of Year*	\$25,688,497	

* Total Net Assets consist of \$2,149,298 of unrestricted and \$23,539,200 of temporarily restricted assets. Assets are deemed restricted until the time or use restriction of the donation is satisfied. \$19,053,025 of these temporarily restricted assets, representing the outstanding Global Alliance pledges net of unamortized discounts, are time-restricted as they have not yet been received by Panthera.



An Extraordinary Commitment

**MADAME HE QIAONYU OF CHINA
JOINS THE GLOBAL ALLIANCE**

Above: Madame He speaks about the benefits of wildlife conservation in China at the signing event.

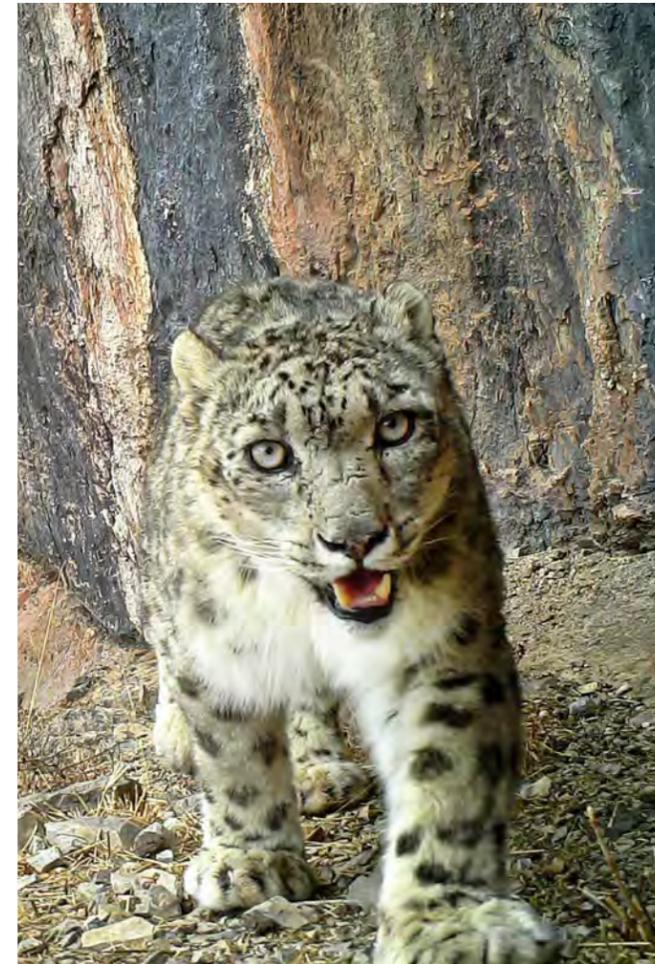
Opposite: A curious snow leopard investigates a camera trap maintained by local herders in Diqing, a small village in China.

In October 2017, a visionary philanthropist and entrepreneur joined forces with Panthera to protect wild cats and their vast landscapes, an historic partnership with game-changing potential.

Meet Madame He Qiaonyu, the newest member of the Global Alliance for Wild Cats.

In a move indicative of China's growing leadership in environmental protection, He's Beijing Qiaonyu Foundation (BQF) will invest \$20 million over the next 10 years to fund conservation programs focused on the 10 most at-risk cats in the world, beginning with the snow leopard and the African lion. The partnership enables BQF to harness the most professional and experienced team in cat conservation to protect and preserve these beautiful but fragile species.

Formed in 2014 under the auspices of His Highness Mohamed bin Zayed Al Nahyan, the Crown Prince of Abu Dhabi, the Global Alliance is an international coalition of leading environmental philanthropists. Madame He joins Panthera Founder Thomas S. Kaplan and his wife Daphne Recanati Kaplan; H.E. Razan Khalifa Al Mubarak, Secretary-General of the Environment Agency—Abu Dhabi; and Hemendra Kothari, founder and chairman of India's Wildlife Conservation Trust.



"I feel fortunate to have met Thomas and to be working with Panthera," Madame He said. "It is an extraordinary undertaking, and to achieve the ambitious outcomes we seek, we are going to mobilize all the passion and intelligence we utilized when starting our businesses."

Conceived by the Kaplans, the Global Alliance provides critical support to Panthera and the NGOs with whom it partners for the development and implementation of science-based solutions that address the primary threats facing big cats: poaching for the illegal wildlife trade, human-cat conflict, loss of prey species, and the loss and fragmentation of habitat.

"Madame He's vision for species conservation is big and bold, befitting China's enormous potential to change the trajectory for threatened big cats at home and around the world," said Dr. Kaplan. "Madame He is herself a force of nature, and I have no doubt that she will galvanize a new homegrown movement to join her in sustaining our planet's most precious and vulnerable wildlife."



Meet Madame He

Madame He is founder and chairman of Beijing Oriental Landscape and Ecology Co. Ltd., the largest landscape architecture company in China. Since establishing Beijing Qiaonyu Foundation in 2012, she has become a force in Chinese philanthropy, investing in such areas as female entrepreneurship, ecological education, and climate change, and is setting the standard in China for emerging philanthropists.

In 2017, Beijing Qiaonyu Foundation introduced an ambitious vision for nature conservation, unveiling an accelerated seven-year plan to protect 28 critical habitat areas within China and conserve dozens of flagship animal and plant species. The Foundation plans to leverage its investments through high-profile partnerships within China and beyond, adopting and applying best practices to achieve its objectives and developing models for conservation worldwide.



Panthera's Reach

Panthera's leading research made headlines throughout 2017, from groundbreaking discoveries about the social interactions of pumas, to revealing data about how the world's nations stack up in their financial contributions to conservation.

And when big cats make the news, Panthera is the media's go-to source. Our expert commentators were quoted in hundreds of articles in the world's leading news outlets.

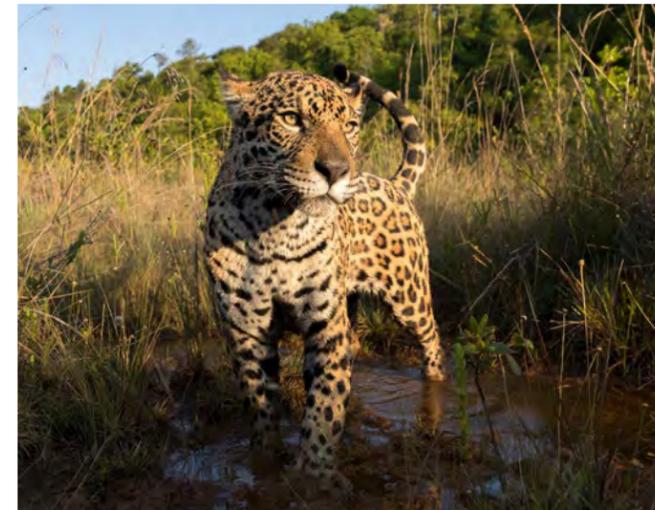
AN INCREDIBLE FIRST

Our partners at Tanzanian organization KopeLion sent us some astonishing photos that provided the first evidence of a wild lioness nursing a leopard cub. Same-species suckling and adoptions of wild cats and other wildlife had been documented before, including the first wild puma kitten adoption captured on camera by Panthera, but cross-species nursing for wild cats is highly unusual. We learned the lioness had recently lost her own litter of cubs. "She is physiologically primed to take care of baby cats, and the little leopard fits the bill," Chief Conservation Officer Dr. Luke Hunter explained. The incident caught the attention of hundreds of thousands of our social media followers, who expressed concern for the leopard cub, who was never seen again.



THE MIRACLE OF MULI

Panthera and GoPro for a Cause released their documentary film, "Let the Tiger Go," the culmination of a two-year project that went deep into the jungle to capture the story of Muli, a wild Sumatran tiger. Muli was gravely injured as a cub and rehabilitated by the skilled vets at Tambling Wildlife Nature Conservation, a Panthera Tigers Forever partner, for release back into the wild. Told in GoPro's unique perspective, the story sheds light on the relentless war on tigers and the extraordinary people who dedicate their lives to protecting them. In addition to camera equipment, GoPro provided a generous match to inspire its fans around the world to support Panthera's tiger conservation work. The film has been viewed nearly 300,000 times on GoPro's YouTube channel alone.



WRITING THE BOOK

Two of Panthera's leading experts on human-cat conflict in Latin America, Drs. Rafael Hoogesteijn and Esteban Payán, led an effort to compile the definitive volume on the subject as a critical tool in our efforts to reduce livestock losses and the retaliatory killing of jaguars and pumas. In 2017, Panthera, Fundación Herencia Ambiental Caribe, and Instituto Humboldt published a first-of-its-kind resource for conservation practitioners entitled "Conflictos entre felinos y humanos en América Latina" ("Conflicts Between Humans and Felids in Latin America"). The book, which brings together 110 authors from 77 institutions representing 18 countries, provides the world's most comprehensive collection of research and analysis on planning, management, and resolution of conflict between humans and wild cats. One thousand Spanish-language copies will be distributed across Latin America.



SAND CAT KITTENS' DEBUT

The world's largest cat is the perennial favorite among Panthera's community, but 2017 saw tigers toppled by a diminutive upstart: the sand cat. On a field visit to Morocco, a team of sand cat researchers—including Gregory Bréton, managing director of Panthera France, and Dr. Alex Sliwa, Panthera Research Associate and curator at Kolner Zoo in Cologne, Germany—captured the first-ever footage of sand cat kittens in the wild. The video of the three tiny kittens blinking adorably at the camera and tumbling over one another was viewed millions of times on social media and featured on news outlets around the world.

Scientific Publications

Anco, C., Kolokotronis, S.-O., Henschel, P., Cunningham, S.W., Amato, G., and Hekkala, E. 2017. **Historical mitochondrial diversity in African leopards (*Panthera pardus*) revealed by archival museum specimens. *Mitochondrial DNA*.**

Aziz, M.A., Tollington, S., Barlow, A., Goodrich, J., Shamsuddoha, M., Islam, M.A., and Groombridge, J.J. 2017. **Investigating patterns of tiger and prey poaching in the Bangladesh Sundarbans: Implications for improved management. *Global Ecology and Conservation*.**

Aziz, M.A., Tollington, S., Barlow, A., Greenwood, C., Goodrich, J.M., Smith, O., Shamsuddoha, M., Islam, M.A., and Groombridge, J.J. 2017. **Using non-invasively collected genetic data to estimate density and population size of tigers in the Bangladesh Sundarbans. *Global Ecology and Conservation*.**

Balme, G.A., Miller, J.R.B., Pitman, R.T., and Hunter, L.T.B. 2017. **Caching reduces kleptoparasitism in a solitary, large felid. *Journal of Animal Ecology*.**

Balme, G.A., Pitman, R.T., Robinson, H.S., Miller, J.R.B., Funston, P.J., and Hunter, L.T.B. 2017. **Leopard distribution and abundance is unaffected by interference competition with lions. *Behavioral Ecology*.**

Balme, G.A., Robinson, H.S., Pitman, R.T., and Hunter, L.T.B. 2017. **Flexibility in the duration of parental care: Female leopards prioritise cub survival over reproductive output. *Journal of Animal Ecology*.**

Bicknell, J.E., Collins, M.B., Pickles, R.S.A., McCann, N.P., Bernard, C.R., Fernandes, D.J., Miller, M.G.R., James, S.M., Williams, A.U., Struebig, M.J., Davies, Z.G., and Smith, R.J. 2017. **Designing protected area networks that translate international conservation commitments into national action. *Biological Conservation*.**

Da Silva, L.G., Kawanishi, K., Henschel, P., Kittle, A., Sanei, A., Reebin, A., Miquelle, D., Stein, A.B., Watson, A., Kekule, L.B., MacHado, R.B., and Eizirik, E. 2017. **Mapping black panthers: Macroecological modeling of melanism in leopards (*Panthera pardus*). *PLoS One*.**

Durant, S.M., Mitchell, N., Groom, R., Pettorelli, N., Ipavec, A., Jacobson, A.P., Woodroffe, R., Böhm, M., Hunter, L.T.B., Becker, M.S., Broekhuis, F., Bashir, S., Andresen, L., Aschenborn, O., Beddiah, M., Belbachir, F., Belbachir-Bazi, A., Berbash, A., Brandao de Matos Machado, I., Breitenmoser, C., Chege, M., Cilliers, D., Davies-Mostert, H., Dickman, A.J., Ezekiel, F., Farhadinia, M.S., Funston, P., Henschel, P., Horgan, J., de longh, H.H., Jowkar, H., Klein, R., Lindsey, P.A., Marker, L., Marnewick, K., Melzheimer, J., Merkle, J., M'soka, J., Msuha, M., O'Neill, H., Parker, M., Purchase, G., Sahailou, S., Saidu, Y., Samna, A., Schmidt-Küntzel, A., Selebatso, E., Sogbohossou, E.A., Soutlan, A., Stone, E., van der Meer, E., van Vuuren, R., Wykstra, M., and Young-Overton, K. 2017. **The global decline of cheetah *Acinonyx jubatus* and what it means for conservation. *Proceedings of the National Academy of Sciences*.**

Elbroch, L.M., Feltner, J., and Quigley, H.B., 2017. **Stage-dependent puma predation on dangerous prey. *Journal of Zoology*.**

Elbroch, L.M., Feltner, J., and Quigley, H. 2017. **Human-carnivore competition for antlered ungulates: Do pumas select for bulls and bucks? *Wildlife Research*.**

Elbroch, L.M., Levy, M., Lubell, M., Quigley, H., and Caragiulo, A. 2017. **Adaptive social strategies in a solitary carnivore. *Science Advances*.**

Elbroch, L.M., López-González, C., Fitzgerald, J., Kusler, A., and Quigley, H. 2017. **Attraction-repulsion among top predators following reintroduction efforts. *Mammalian Biology*.**

Elbroch, L.M., O'Malley, C., Peziol, M., and Quigley, H.B. 2017. **Vertebrate diversity benefiting from carrion provided by pumas and other subordinate, apex felids. *Biological Conservation*.**

Elbroch, L.M., Robertson, L., Combs, K., and Fitzgerald, J. 2017. **Contrasting bobcat values. *Biodiversity and Conservation*.**

Farhadinia, M.S., Hunter, L.T.B., Jourabchian, A., Hosseini-Zavarei, F., Akbari, H., Ziaie, H., Schaller, G.B., and Jowkar, H. 2017. **The critically endangered Asiatic cheetah *Acinonyx jubatus venaticus* in Iran: a review of recent distribution, and conservation status. *Biodiversity and Conservation*.**

Farhadinia, M.S., Johnson, P.J., Hunter, L.T.B., and Macdonald, D.W. 2017. **Wolves can suppress goodwill for leopards: Patterns of human-predator coexistence in northeastern Iran. *Biological Conservation*.**

Feldman, R.E., Peers, M.J.L., Pickles, R.S.A., Thornton, D., and Murray, D.L. 2017. **Climate driven range divergence among host species affects range-wide patterns of parasitism. *Global Ecology and Conservation*.**

Harihar, A., Ghosh-Harihar, M., and Macmillan, D.C., 2017. **Losing time for the tiger *Panthera tigris*: Delayed action puts a globally threatened species at risk of local extinction. *Oryx*.**

Harmsen, B.J., Foster, R.J., Sanchez, E., Gutierrez-González, C.E., Silver, S.C., Ostro, L.E.T., Kelly, M.J., Kay, E., and Quigley, H. 2017. **Long term monitoring of jaguars in the Cockscomb Basin Wildlife Sanctuary, Belize; Implications for camera trap studies of carnivores. *PLoS One*.**

Hearn, A.J., Ross, J., Bernard, H., Bakar, S.A., Goossens, B., Hunter, L.T.B., and Macdonald, D.W. 2017. **Responses of Sunda clouded leopard *Neofelis diardi* population density to anthropogenic disturbance: refining estimates of its conservation status in Sabah. *Oryx*.**

Jędrzejewski, W., Boede, E.O., Abarca, M., Sánchez-Mercado, A., Ferrer-Paris, J.R., Lampo, M., Velásquez, G., Carreño, R., Viloría, Á.L., Hoogesteijn, R., Robinson, H.S., Stachowicz, I., Cerda, H., Weisz, M. del M., Barros, T.R., Rivas, G.A., Borges, G., Molinari, J., Lew, D., Takiff, H., and Schmidt, K. 2017. **Predicting carnivore distribution and extirpation rate based on human impacts and productivity factors; assessment of the state of jaguar (*Panthera onca*) in Venezuela. *Biological Conservation*.**

Jędrzejewski, W., Carreño, R., Sánchez-Mercado, A., Schmidt, K., Abarca, M., Robinson, H.S., Boede, E.O., Hoogesteijn, R., Viloría, Á.L., Cerda, H., Velásquez, G., and Zambrano-Martínez, S. 2017. **Human-jaguar conflicts and the relative importance of retaliatory killing and hunting for jaguar (*Panthera onca*) populations in Venezuela. *Biological Conservation*.**

Jędrzejewski, W., Puerto, M.F., Goldberg, J.F., Hebblewhite, M., Abarca, M., Gamarra, G., Calderón, L.E., Romero, J.F., Viloría, Á.L., Carreño, R., Robinson, H.S., Lampo, M., Boede, E.O., Biganzoli, A., Stachowicz, I., Velásquez, G., and Schmidt, K. 2017. **Density and population structure of the jaguar (*Panthera onca*) in a protected area of Los Llanos, Venezuela, from 1 year of camera trap monitoring. *Mammal Research*.**

King, T.W., Salom-Pérez, R., Shipley, L.A., Quigley, H.B., and Thornton, D.H. 2017. **Ocelot latrines: communication centers for Neotropical mammals. *Journal of Mammalogy*.**

Kusler, A., Elbroch, L.M., Quigley, H., and Grigione, M. 2017. **Bed site selection by a subordinate predator: an example with the cougar (*Puma concolor*) in the Greater Yellowstone Ecosystem. *PeerJ*.**

Lamichhane, B.R., Pokheral, C.P., Poudel, S., Adhikari, D., Giri, S.R., Bhattarai, S., Bhatta, T.R., Pickles, R., Amin, R., Acharya, K.P., Dhakal, M., Regmi, U.R., Ram, A.K., and Subedi, N. 2017. **Rapid recovery of tigers *Panthera tigris* in Parsa Wildlife Reserve, Nepal. *Oryx*.**

Lindsey, P.A., Petracca, L.S., Funston, P.J., Bauer, H., Dickman, A., Everatt, K., Flyman, M., Henschel, P., Hinks, A.E., Kasiki, S., Loveridge, A., Macdonald, D.W., Mandisodza, R., Mgoola, W., Miller, S.M., Nazerali, S., Siege, L., Uiseb, K., and Hunter, L.T.B. 2017. **The performance of African protected areas for lions and their prey. *Biological Conservation*.**

Lindsey, P.A., Chapron, G., Petracca, L.S., Burnham, D., Hayward, M.W., Henschel, P., Hinks, A.E., Garnett, S.T., Macdonald, D.W., Macdonald, E.A., Ripple, W.J., Zander, K., and Dickman, A. 2017. **Relative efforts of countries to conserve world's megafauna. *Global Ecology and Conservation*.**

Panthera scientists authored or contributed to more than 68 scientific papers, books, letters, reviews, and other publications in 2017. These are the highlights. For a complete listing, please email info@panthera.org.

Maruping-Mzileni, N.T., Funston, P.J., and Ferreira, S.M. 2017. **State-shifts of lion prey selection in the Kruger National Park. *Wildlife Research*.**

McCarthy, T., Mallon, D., Jackson, R., Zahler, P., and McCarthy, K. 2017. **Panthera uncia, Snow Leopard. *IUCN Red List Assessment*.**

Pitman, R.T., Fattebert, J., Williams, S.T., Williams, K.S., Hill, R.A., Hunter, L.T.B., Robinson, H., Power, J., Swanepoel, L., Slotow, R., and Balme, G.A. 2017. **Cats, connectivity and conservation: incorporating data sets and integrating scales for wildlife management. *Journal of Applied Ecology*.**

Quigley, H., Foster, R., Petracca, L., Payan, E., Salom, R., and Harmsen, B. 2017. **Panthera onca. *IUCN Red List Assessment*.**

Rich, L.N., Miller, D.A.W., Robinson, H.S., McNutt, J.W., and Kelly, M.J. 2017. **Carnivore distributions in Botswana are shaped by resource availability and intraguild species. *Journal of Zoology*.**

Rich, L.N., Davis, C.L., Farris, Z.J., Miller, D.A.W., Tucker, J.M., Hamel, S., Farhadinia, M.S., Steenweg, R., Di Bitetti, M.S., Thapa, K., Kane, M.D., Sunarto, S., Robinson, N.P., Paviolo, A., Cruz, P., Martins, Q., Gholikhani, N., Taktehrani, A., Whittington, J., Widodo, F.A., Yoccoz, N.G., Wultsch, C., Harmsen, B.J., and Kelly, M.J. 2017. **Assessing global patterns in mammalian carnivore occupancy and richness by integrating local camera trap surveys. *Global Ecology and Biogeography*.**

Rogan, M.S., Lindsey, P.A., Tambling, C.J., Golabek, K.A., Chase, M.J., Collins, K., and McNutt, J.W. 2017. **Illegal bushmeat hunters compete with predators and threaten wild herbivore populations in a global tourism hotspot. *Biological Conservation*.**

Schank, C.J., Cove, M. V., Kelly, M.J., Mendoza, E., O'Farrill, G., Reyna-Hurtado, R., Meyer, N., Jordan, C.A., González-Maya, J.F., Lizcano, D.J., Moreno, R., Dobbins, M.T., Montalvo, V., Sáenz-Bolaños, C., Jimenez, E.C., Estrada, N., Cruz Díaz, J.C., Saenz, J., Spínola, M., Carver, A., Fort, J., Nielsen, C.K., Botello, F., Pozo Montuy, G., Rivero, M., de la Torre, J.A., Brenes-Mora, E., Godínez-Gómez, O., Wood, M.A., Gilbert, J., and Miller, J.A. 2017. **Using a novel model approach to assess the distribution and conservation status of the endangered Baird's tapir. *Diversity and Distributions*.**

Scotson, L., Fredriksson, G., Ngoprasert, D., Wong, W.-M., and Fieberg, J. 2017. **Projecting range-wide sun bear population trends using tree cover and camera-trap bycatch data. *PLoS One*.**

Scotson, L., Johnston, L.R., Iannarilli, F., Wearn, O.R., Mohd-Azlan, J., Wong, W.M., Gray, T.N.E., Dinata, Y., Suzuki, A., Willard, C.E., Frechette, J., Loken, B., Steinmetz, R., Moßbrucker, A.M., Clements, G.R., and Fieberg, J. 2017. **Best practices and software for the management and sharing of camera trap data for small and large scales studies. *Remote Sensing in Ecology and Conservation*.**

Smith, O. 2017. **Rapid, field-based screening for chital (*Axis axis*) DNA in illegal meat markets. *Conservation Genetics Resources*.**

Tortato, F.R., Izzo, T.J., Hoogesteijn, R., and Peres, C.A. 2017. **The numbers of the beast: Valuation of jaguar (*Panthera onca*) tourism and cattle depredation in the Brazilian Pantanal. *Global Ecology and Conservation*.**

Tortato, F.R. and Izzo, T.J. 2017. **Advances and barriers to the development of jaguar-tourism in the Brazilian Pantanal. *Perspectives in Ecology and Conservation*.**

Trouwborst, A., Blackmore, A., Boitani, L., Bowman, M., Caddell, R., Chapron, G., Cliquet, A., Couzens, E., Epstein, Y., Fernández-Galiano, E., Fleurke, F.M., Gardner, R., Hunter, L., Jacobsen, K., Krofel, M., Lewis, M., López-Bao, J.V., Macdonald, D., Redpath, S., Wandesforde-Smith, G., and Linnell, J.D.C. 2017. **International Wildlife Law: Understanding and Enhancing Its Role in Conservation. *BioScience*.**

Wood, I., Park, S., Tooke, J., Smith, O., Morgan, R.M., and Meakin, G.E. 2017. **Efficiencies of recovery and extraction of trace DNA from non-porous surfaces. *Forensic Science International: Genetics Supplement Series*.**



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A female snow leopard stalks her prey over broken rocky terrain in the Western Himalayas in Ladakh, India.

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Diplomat and Author
Formerly, Chief of Staff to Prime Minister Tony Blair
CEO of Inter Mediate

Arnaud de Puyfontaine
Chief Executive Officer
Vivendi

Andrew Revkin
Senior Reporter for Climate and Related Issues, ProPublica
Formerly, Reporter, The New York Times and Senior Fellow for Environmental Understanding, Pace University

Sir Norman Rosenthal KBE
Curator and Art Historian
Formerly, Exhibitions Secretary, the Royal Academy

Andy Sabin
Entrepreneur and Conservationist
Chairman, Sabin Metal Corporation
Founder, Andrew Sabin Family Foundation

Jaqui Safra
Investor, Collector, Entrepreneur, and Philanthropist

Dr. Claudio Segré
Economist and Banker
Founder, Fondation Segré

Vance Serchuk
Executive Director of the KKR Global Institute
Formerly, Senior Foreign Policy Adviser to Senator Joseph Lieberman (I-CT)
Officer in the U.S. Navy Reserve

Nina Siemiatkowski
Wildlife Photographer and Marketing Advisor to Conservation Organizations

Kate Silverton
Journalist
Anchor for BBC News

Wilbur Smith
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Founder, Wilbur Smith Foundation

Daisy Soros
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Chairman of the Paul and Daisy Soros Fellowships for New Americans

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Daniel Wolf Photography



Panthera board members, staff, teachers, and students in front of Jofre Velho School in the Brazilian Pantanal

Conservation and Coexistence



ALLISON DEVLIN
Postdoctoral Research Associate, Jaguar Program

At Panthera, we admire wild cats as magnificent predators, but we also know that when a cat kills livestock, people lose their livelihood. Addressing that tension is one of Panthera's strengths. We work with local people to create solutions designed to improve lives, reduce hardship for those who have the most at stake, and deliver tangible benefits from living among big cats.

Our Jaguar Corridor Initiative embodies this approach. Throughout Latin America, Panthera's people are residents of, or deeply rooted in, local communities. As a result, lifelong ranchers—many of whom previously hunted jaguars—are now our partners in developing the anti-predation techniques used on over 50 ranches in Belize, Brazil, Costa Rica, and Colombia.

Building local capacity is key. Since 2009, Drs. Bart Harmsen and Rebecca Foster have mentored dozens of students in partnership with the University of Belize. They have trained an entire generation of wildlife managers and researchers to be the next stewards of Belize's wildlife and wild places.

In the Brazilian Pantanal, the high-quality, free education provided by our Jofre Velho School to children and their parents directly benefits the riverine community and its wildlife. The school's sole teacher, Suelen Leite, speaks passionately about her work. During a heart-to-heart conversation, she told me that "Education is the one thing that can never be taken away."

The reward for our long-term presence in places like Jofre and rural communities worldwide? Mutual trust and knowing that our shared commitment to big cats is an investment in families and their futures.

Your investment is also critical. On behalf of my colleagues, thank you for joining us in the fight to save wild cats.

A female puma in
Torres del Paine National Park
in Patagonia, Chile



CREDITS

Editor: Karen Wood

Writers: Angela Cave and Meredith Guinness

Designer: Danielle Garbouchian

PHOTO CREDITS

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PANTHERA

**8 WEST 40TH STREET
18TH FLOOR
NEW YORK, NY 10018
(646) 786 0400**

WWW.PANTHERA.ORG